
An introduction to reasoning

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Fallacies

Just as certain widely accepted ways of constructing arguments are recognized as sound across a wide range of fields, so too certain modes of procedure in argumentation have been traditionally recognized as unsound. These are termed *fallacies*. No discussion of practical reasoning is complete that does not consider some representative examples of fallacies and enquire what makes them fallacious.

Three preliminary cautions are required:

1. Many fallacies result from the inappropriate or untimely use of the rational strategies, or procedures of argument, so the catalog of possible fallacies—like the catalog of topics, or types of argument—will forever remain incomplete. (People can always invent new ways of going astray in their reasoning!)
2. Further, fallacies do not lend themselves to any neat and tidy classification. So we shall simply proceed here to discuss and give illustrations of various typical sorts of fallacies, without offering any systematic or formal account of their “genera” and “species.”
3. Most disturbingly to some people, arguments that are fallacious in one context may prove to be quite solid in another context. So we shall not be able to identify any intrinsically fallacious forms of argument; instead we shall try to indicate why certain kinds of argument are, in practice, fallacious in this or that kind of context.

In what follows, therefore, we shall emphasize how by paying proper attention to the warrants we employ in our arguments and watching out for the pitfalls that result from the ambiguity of our terms we may hope to circumvent these difficulties.

The study of fallacies can be thought of as a kind of “sensitivity training” in reasoning. It should attune the student to the omnipresent dangers to which we are exposed as a consequence of imprecise expressions—vague, ambiguous, or misdefined terms—or of unarticulated assumptions and presuppositions.

TWO TYPES OF FALLACIES

Fallacies are arguments that are persuasive yet unsound. Their persuasiveness comes from their superficial resemblance to sound arguments; this similarity lends them an air of plausibility. Notice at the outset that fallacies may be either deliberate or accidental, either honest or dishonest. This distinction is important, because we shall naturally respond to any particular fallacy in different ways in either case. We do not blame people for being misled themselves. We simply ask them to reformulate their arguments in ways that eliminate the fallacies in question. On the other hand, if we discover that a fallacy is deliberate—that the speaker is trying to put one over on us—we may be inclined to question whether there is any point in continuing the discussion.

Finally, one last distinction is worth noting, between

1. Arguments that involve an unacceptable or illicit step from grounds (*G*) to claim (*C*), and that accordingly rest on *unwarranted assumptions*; and
2. Arguments that are flawed as a result of *ambiguities* in their constituent terms.

FALLACIES OF UNWARRANTED ASSUMPTIONS

Let us begin by looking at the “fallacies of unwarranted assumption.” These are arguments that are fallacious because they appeal to warrants that *either* cannot be backed *or else* must be restricted or qualified.

Hasty generalization

The name that logicians give to the everyday phenomenon of “jumping to conclusions” is *fallacies of hasty generalization*. We commit fallacies of hasty generalization when we:

1. Draw a general conclusion from *too few* specific instances, for example, basing the general statement “All Audis are lemons” on a few individual reports from friends who have happened to have trouble with their own Audis.

or, alternatively, when we:

2. Draw a general conclusion from *untypical* examples, for example, concluding that we do not care for Woody Allen movies (which are normally comedies) on the basis of our reaction to *The Front* (one of the rare serious films in which Allen acted).

Thus we jump to conclusions when we *either* fail to take note of a sufficiently large sample of cases *or else* select as our grounds some individual case that is atypical of the class in question.

Too small samples. Racists often commit the first kind of hasty generalization when they argue, say, that Poles are unintelligent on the grounds that the thirty-odd Poles they have worked with over the years have all appeared to them to be on the dull side. If we ask such a person to spell out the warrant (*W*) he employs and then to provide appropriate backing (*B*) for it, the irrationality of his position quickly becomes obvious. For his argument will be something like that in Figure 11-1.

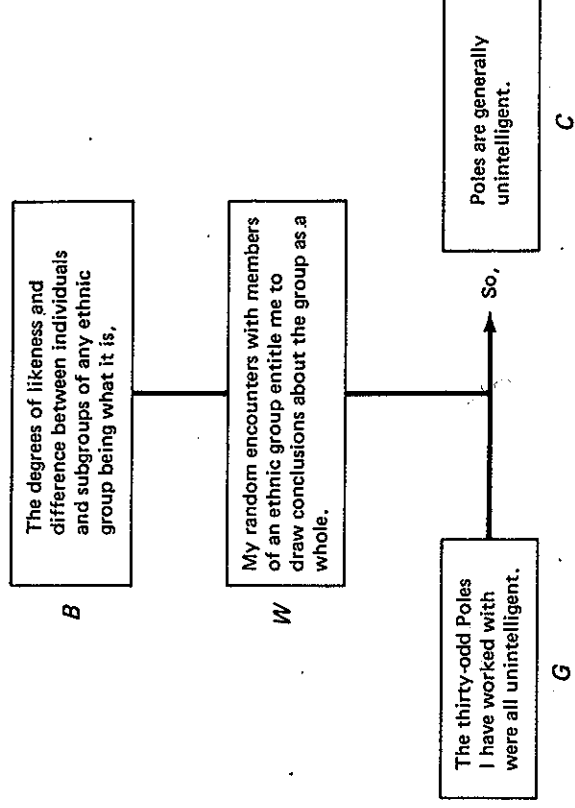


FIGURE 11-1

Once we attempt to support the warrant implicitly appealed to in such an argument, the difficulties involved in such generalizations are evident. The warrant on which our hypothetical bigot relies—"My thirty random encounters with members of this ethnic group entitle me to form judgments about the group as a whole"—is open to a devastating rebuttal. For both the total number of Polish-Americans in the U.S. population and the variety of individuals and subgroups among them clearly establish the inadequacy of the original sample of thirty.

Atypical examples. The other kind of fallacy of hasty generalization occurs when we take as our evidence examples that are unrepresentative of the given phenomenon (say, cats with six toes) and base a general conclusion upon that atypical evidence (say, a conclusion about cats in general).

Thus we cannot draw any general conclusions about Woody Allen's films on the basis of *The Front*, in the way that we could perhaps do on the basis of *Everything You Always Wanted to Know About Sex or Annie Hall*. (The latter two movies are more "typical" than the first.) Someone who had seen only *The Front* might argue, for instance:

C: People make too much fuss about Woody Allen's film performances.

And he might support this claim by saying,

G: In *The Front*, Woody Allen played a role that could be clearly classified neither as straight nor as comic. The result was merely confusing and gave no evidence of Allen's competence as an actor.

In this case, the step from G to C evidently rests on an assumed warrant (see Figure 11-2).

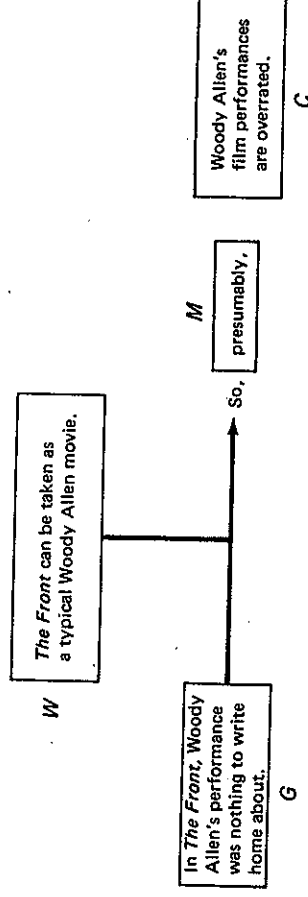


FIGURE 11-2

W: *The Front* can be taken as typical of the films in which Woody Allen has acted.

The presumed conclusion of this argument, is, of course, immediately subject to the objection:

R: Neither was *The Front* directed by Allen nor was it a comedy like most of his films, nor was it even particularly well directed—in short, his performance in *The Front* is in no way typical of his movie performances.

This rebuttal (R) introduces evidence that clearly invalidates appeals to *The Front* as irrelevant to any discussion of Woody Allen's *general* merits as a movie actor.

Taking these two kinds of hasty generalizations together, we can already see something about *what makes fallacies fallacious*. This is that the most insidiously deceptive things about unsound arguments spring from their *abbreviation*, that is, from the omission of indispensable elements. If we are forced to spell out the war-

rants on which our arguments rely and the backing on which those warrants depend, it will usually become clear at once when our grounds are based on *too small* a sample of cases or on examples that are quite *untypical*.

Accident

The fallacy of accident occurs when someone bases an argument on a rule that is valid *in general* but fails to consider whether the case in question may not fall under one of the *exceptions* to that rule. The person who commits the fallacy of accident fails to acknowledge that some particular aspect of the present situation makes the general rule inapplicable to it.

One frequent illustration of this fallacy is to be seen in the way in which some people argue about their right to their own property, as though property rights were absolute and could never be violated under any circumstances (see Figure 11-3).

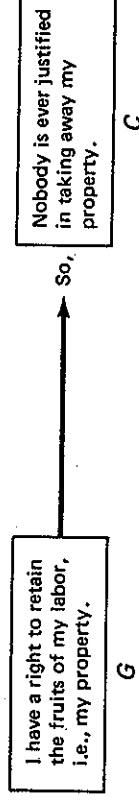


FIGURE 11-3

Here the all-important warrant relied on is seen in Figure 11-4.

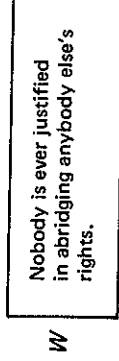


FIGURE 11-4

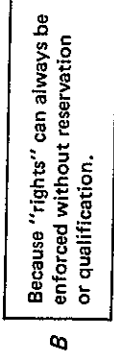


FIGURE 11-5

And this in turn requires for its backing the statement in Figure 11-5, which is plainly untrue.

Two things need to be noted here:

1. The implicit warrant, *W*, involves the specific moral and legal term *rights* and uses it in a way that runs counter to common usage and experience.
2. This departure from common usage could be defended only by the elaboration of a full-scale, absolutist "theory of rights."

The difficulty that arises in this case springs from the arguer's refusal to recognize that there can be any but universal rules—from the assumption that where there are *rules*, there can be no *exceptions*:

Imagine someone's arguing that fire engines and funeral processions ought not to go through stop signs without stopping, because there is a rule that all vehicles must come to a full stop at all such intersections.

These arguments illustrate how quickly and easily we may find ourselves moving, in the course of argumentation, *from* the familiar and concrete *to* the abstract and general.

Further, the fallacy of accident, like the fallacy of hasty generalization, illustrates how easily the fallaciousness of bad reasoning can be detected once we get into the habits of asking for the rule or warrant on which the argument relies and looking for the justification or backing by which that warrant is supported.

False cause

The fallacy of false cause occurs:

1. When we confuse temporal succession with causal sequence, that is, when we take one event to be the cause of another simply because the one event *happened before* the other.
2. When we mistakenly take one event to be the cause of another, that is, when we assert that the one event is the cause of the other and are simply *wrong*.

There are two ways of misusing the topic *cause* in argumentation, which we will consider in turn.

Temporal succession and causation. To illustrate the first type of fallacy of false cause, suppose that a customer appears at an all-night lunchroom late on a Saturday morning and complains that a sandwich he ate there in the early hours made him nauseous at 5 A.M. The implicit argument in this case is as follows:

C: Your sandwich made me nauseous at 5 A.M.

G: Your sandwich was the last thing I ate before going to bed last night.

W: The last thing that I ate was presumably the cause of my nausea.

The manager of the lunchroom—if he knows his customer—may ask in reply whether by any chance the customer had drunk anything alcoholic before eating the sandwich. The customer replies that he had only a dozen or so cans of beer, to which the lunchroom manager is entitled to respond:

“Did it never occur to you that the beer might have made you nauseous?”

He thereby questions the backing for the customer's warrant.

The source of the customer's nausea must be determined by a consideration of the *normal causes* of such disorders, that is, the kinds of thing that bring them on in the normal course of events. It is always possible that an overrich or stale sandwich was the culprit; we know enough about the workings of the stomach and the effects of spicy food and bacteria upon those processes to recognize that an ill-timed sandwich could bring on a stomach disorder. Even so, it could not be identified as the cause simply because it was the last thing the customer ate before the sickness occurred. Knowing what we do about the effects of beer and observing that nobody else had been made ill by the lunchroom food last night, we might find it safer to conclude that the beer had got to him.

The central point here is that *causality* normally involves more than *temporal succession* alone. The answers to questions about causes always rest on assumptions about general explanatory mechanisms and processes, for example, about how beer decomposes into stomach acid. It is these general assumptions that allow us to establish substantive connections between the two event in question. The grounds, in short, must be *causally relevant* to the claim.

To cite another example, politicians often take credit for, say, economic upswings that take place *after* their party gets into office without indicating what it was about their policies that brought about this improvement. The risk of committing the fallacy of false cause should warn us not to make the simplistic leap to the conclusion that the later event (the upswing) was *brought about by* the earlier event (the change of administration) merely because it came after it. In this case, decisions taken in quite another part of the world may have been chiefly responsible for the current prosperity here in ways that can be analyzed adequately only in economic, rather than political, terms. Alternatively the true cause of the improvement may be that the sound (but unpopular) policies of the previous administration are now bearing fruit at last!

Such examples as these indicate the complexities surrounding causal claims and explanations, in both the natural and the social sciences. There is, indeed, a mountain of literature about causality in the philosophy of science that attests to the manifold difficulties that surround the concept.

Mistaken cause. Our second type of false-cause fallacy occurs when we are simply *mistaken* about a given phenomenon. The history of science abounds with such false attributions of causality; for example, the notion that lower animals are generated spontaneously in rotting matter, accepted by thinkers as different as Albertus Magnus and Francis Bacon.

Not all false attributions of causality need, of course, be labeled as fallacies. In the time of Albertus Magnus, for instance, no alternative explanation was avail-

able to account for the appearance of, say, maggots in rotten meat. So it would be as harsh to fault Albert the Great for his false belief in this case as it would be to fault medieval astronomers for accepting Ptolemaic astronomy, with its Earth-centered picture of the universe. We may properly speak of the fallacy of false cause only when the arguer is himself responsible for his own lack of information on the given subject.

Statistical correlations often serve as the basis for fallacious causal reasoning of this second type. Consider the example in Figure 11-6.

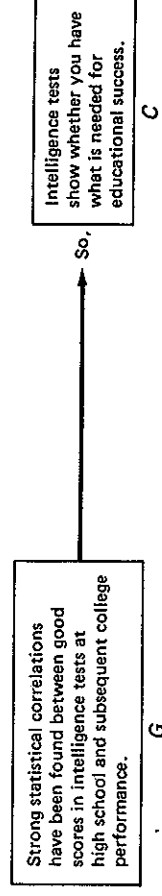


FIGURE 11-6

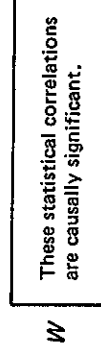


FIGURE 11-7

This argument relies on the implicit warrant in Figure 11-7. And we can hardly accept this warrant without further, more detailed investigation of *this particular case*.

Clearly, statistical reasoning is afflicted by all sorts of pitfalls. It might, for example, prove possible to correlate success in college with a student's choice of breakfast cereal or even with the baby food that his mother fed him—which would delight the cereal and baby food producers! But we would view any such discovery with serious suspicion so long as it was based on statistical evidence *alone*. Evidently the *causal relevance* of statistical considerations has to be established by other arguments just as much as the causal relevance of temporal succession.

There is, in any case, a further difficulty. For may not "success in high school intelligence tests" itself be, in part, a *cause* of "success in higher education"? What, for instance, if those who do well on these tests are preferred by institutions of higher learning *just because* they do well on those tests? In that case, the statistical correlations themselves may not be measuring intelligence so much as providing a justification for preserving the existing structure—and biases—of our institutions. In that case, the argument would no longer illustrate the fallacy of false cause; rather, we would now be faced by a "self-fulfilling prophecy."

We must be particularly cautious in dealing with claims based solely upon statistical evidence, not because "probability" has no place in reasoning but because so many different *kinds* of correlations are present in any given situation—only one of which might claim to be the one and only cause. Statistical correlations have the same sort of relation to causal assertions that a series of points

on a graph have to the curve a scientist draws through them. Many different curves may be used to link the points together, and we must have good outside reasons for choosing one rather than another.

A final note of warning: the task of assigning causes to given events is rarely simple and straightforward. So the real danger behind the fallacy of false cause is the danger of *oversimplification*. In ordinary discourse, we often do not stop to articulate our warrants, let alone to scrutinize our backing and modal qualifiers. By paying closer attention to these other elements, we can help to avoid the fallacy altogether or else reformulate our arguments in such a way that it is easy to recognize and guard against.

False analogy

Hardly any type of argument exposes us to the risk of fallacy more often than analogy. Analogies are comparisons that enrich our language and have the power to enlighten our understanding—when they are appropriate and successful. Sometimes they work on us through similes or metaphors. Think of likening the lion to a king in the phrase “king of beasts,” or the state to a ship in the phrase “the ship of state,” or the German World War II commander Field Marshal Erwin Rommel to a fox in the nickname “The Desert Fox.”

All these comparisons are worth making in certain contexts. Yet there are limits to the value of any such comparisons. All analogies limp at some point or other; so when we make a comparison that seems appropriate but is not, we may end up with a false analogy.

It will be helpful to set an example of successful reasoning by analogy alongside a false analogy for purposes of contrast. In arriving at his celebrated theory of evolution by natural selection, Charles Darwin made successful use of an analogy to solve his problem.

Darwin argues:

C: Environment must act upon animal populations selectively, in a way that explains why only the best-adapted variants within any species are able to survive.

G: Domestic breeders succeed in producing improved strains of domestic animals—for example, stronger or bigger ones—by controlling the breeding of their animals and selecting out preferred strains.

His assumption was

W: Domestic animals change because farmers select out their breeding stock for desired characteristics, and presumably something similar accounts for the variation in natural species. Nature, or the environment, must “select” certain members of the species in preference to others,

and this selection improves the adaptation of the species to the environment.

Here Darwin's argument is compressed to the point of caricature. Indeed all 500 pages of the *Origin of Species* were needed in order to spell out—that is, provide backing for—and defend his analogy between natural and domestic selection. The point is that Darwin succeeded in explaining vexing problems about the historical appearance of new species by drawing upon analogies about the folk wisdom of his day. In this case, the appeal to analogy was successful: the points of significant similarity far outweighed the differences.

By contrast, the classic example of *false* analogy comes from political theory; that is, the likening of the state to an *organism*. This “organic” analogy has been widely relied on to support the claim that in a truly healthy state, the individual's interests must be completely subordinated to those of the state. (Naturally enough, the organic theory has been a favorite among totalitarian rulers.) It can be set out schematically as follows:

C: Individual interests are subordinate to those of the state.
because

G: Cells, organs, and limbs are subordinate to the entire organism; so, if a limb becomes gangrenous, we simply amputate it.

The presumption is that

W: The individual's relationship to the state is exactly parallel to the relationship of limbs, organs, or cells to the whole organism.

Although the grounds are clearly true in this case, the warrant is only partly accurate. Certainly, the state resembles an organized living thing in *certain respects*; for example, both of them existed before and continue to exist after their constituent parts. However, the separate parts of an organism cannot survive for long independently of the entire organism (think of a human kidney existing apart from a human body) in the way that individual human beings can exist without a state (think of Robinson Crusoe). And it is those individuals themselves who conceive of, claim, and defend the “interests” of the state as much as they do their own.

So although state and organism are similar in *certain* respects, it remains to be shown that they are similar in *all significant and relevant* respects. For instance, my kidney cannot choose whether to obey or to disobey me in the way that I myself can choose whether to obey or disobey some official of the state. Although there may indeed be points of similarity between the state and an organized

living body, these are not enough, by themselves, to clarify the most significant aspects of the state, and they are certainly not enough to justify subordinating human individuals to the state.

In short, just because two things are comparable in certain respects, it can by no means be assumed that they are comparable in any other respects. That further similarity must be established independently before argument from analogy can be secure.

This is not to say that *all* analogical reasoning is fallacious. On the contrary; such scientific phrases as “electric *current*” and “natural *selection*” have won acceptance just because of the successful analogies (with water flow and domestication) on which they rested. But although analogy can be an indispensable instrument of discovery in the understanding of the world around us, reasoning from analogy is nonetheless fraught with difficulties and pitfalls. It is an instrument that we must use with great care and circumspection—to *suggest* warrants whose adequacy, relevance, and backing we must take care to scrutinize later.

Poisoning the wells

In the course of practical argumentation, we are sometimes tempted to go overboard in our efforts to make a conclusion ironclad. At first glance, this may seem innocent enough; as always, it depends on how we set about achieving this result. For example; we may be tempted to put forward a claim against which *no evidence whatsoever* can be brought and use this argument to reinforce another, prior claim. This procedure commits the fallacy of poisoning the wells.

Nearly all social and psychological cure-alls—dianetics, orgonomy, EST, or whatever—rely on warrants that are accepted unquestioningly. Those who challenge their claims are dismissed as being in bad faith; they are not merely failing to “see the point” of the main claim, they are also failing to see that any evidence that appears to run contrary to the claim actually confirms the view when interpreted as the claim requires. All evidence is in this way reinterpreted so as to confirm the theory. Simpleminded believers in all kinds of faiths—psychotherapeutic, religious, and political alike—often fall into this trap.

For instance, the Fundamentalist may claim (C) that only the saved can act morally. What does he then do when confronted with an apparent counterinstance, for example, the local atheist who is also a pillar of the community? In reply, the Fundamentalist may insist that the atheist only *seems* to be a pillar of the community—only a sinner could fail to see that atheism renders actions that appear on the surface to be beneficial *evil*. Presumably, by giving the atheist a good standing in the community, such “good deeds” undermine the word of God and so “do more harm than good” in the Fundamentalist’s eyes.

The point is not just that such a Fundamentalist questions the morality of anyone who disagrees with his views—which he does by committing the fallacy of arguing against the person, which we shall look at later. In addition, he rein-

interprets any factual evidence against his central contention in such a way as to turn it into further corroboration of his beliefs. This fallacy is, of course, the common property of all “true believers,” including uncritical supporters of militant atheism, communism, Freud, and health food. They are committed to their positions in ways that require them to *explain away* absolutely everything that might justify exceptions or qualifications. When they cannot do this conveniently, they must fit the contrary evidence into their scheme of things by reinterpreting it. Their warrants are never restricted or qualified, so they can never admit the slightest exception or limitation on their views.

The fallacy of poisoning the wells is another one that involves misusing warrants. Effectively, to commit this fallacy means refusing to qualify or restrict a warrant in the face of evidence that should oblige us to do so. The arguer who perpetrates this fallacy simply refuses to consider data that do not conform to his general claims, and he turns counterexamples against his questioners by using them as evidence of bad faith or delusion on the questioner’s part.

Begging the question

Another common fallacy is known as *begging the question*, or *circularity*. We commit this fallacy when we make a claim and then argue on its behalf by advancing “grounds” whose meaning is simply equivalent to that of the original claim. We seem to be asserting *C* and offering additional grounds, *G*, in its support, but actually *C* and *G* turn out to mean exactly the same things—though this fact may be concealed because they are phrased in different terms.

A: Smith is telling the truth.

Q: Why do you say that?

A: He wouldn’t lie to me about this.

If “he wouldn’t lie” is understood to mean “is not on this occasion lying,” *A*’s second statement is nothing more than disguised *restatement* of his first statement and adds nothing to it. They differ only in that one is stated in positive, the other in negative, terms.

As with many other fallacies, begging the question becomes easier and more deceptive the larger and more extended the arguments in which it occurs:

A: Pablo Picasso is the greatest painter of this century.

Q: How do you know that?

A: People who know about art admire Picasso above all other twentieth-century artists.

So far there is nothing about this argument to object to. But it can quickly become question begging if our assertor is asked to expand on his grounds:

Q: Just who are these people who know so much about art?

A: The people who know about twentieth-century art are people who understand Picasso's work well enough to admire him above all other painters of the present century.

In this second case, we are more likely to overlook the "circularity" because we so rarely insist that people spell out their arguments in detail. Yet the demand that our arguments be based upon reasons that can be articulated (and must be articulated, if a questioner requires clarification) implies that we should in every case be prepared to spell out the whole of our reasoning on a given subject.

Question begging also occurs in definitions. The so-called circular definition actually begs the question involved in *defining* the term under discussion. Consider the following definitions:

A *cat* is a feline animal.

A *cause* is anything that produces an effect.

Distillation is the operation of distilling.

Each of these formulations presupposes an understanding of the term to be defined. Nobody who does not already know what a cat is can have any idea what it means to be *feline*. Nor can someone who does not already understand what a cause is grasp the notion of an *effect*. Nor, for that matter, is it likely that someone who has no idea of what distillation is will know what *distilling* is. The last instance is an example of defining *by synonym*—a typical feature of vest-pocket dictionaries, which is one of the reasons teachers discourage students from using such dictionaries.

Question begging amounts to a failure to advance substantial evidence in support of a claim. What appears to be offered as evidence is in fact merely a restatement of the claim itself. On the other hand, question begging is never by itself fatal to an argument. Although nothing substantive has been added to the original claim, nothing has been done to discredit it either. If the assertor has a position that can be defended—if grounds are available on which he can build his claim—he must merely start anew and approach the subject from another direction.

Question-begging epithets. Another frequent source of fallacies is the use of question-begging epithets. These are phrases that are either fallaciously circular or else permit complex questions to enter into arguments. Terms such as *naive optimist*, *bleeding heart liberal*, *foolhardy radical*, *cowardly pacifist*, *dangerous atheist*, *mindless Fundamentalist*, *obscurantist conservative*, and the like may in a few cases be perfectly apt descriptions of the individuals concerned. But the use of such phrases can quickly become a dangerous habit. Each is a complex description, in which the modifying epithet (*naive*, *mindless*, and so on) comes to be

treated as a universal feature of all who belong to the group designated by the corresponding noun (*optimist*, *Fundamentalist*, and so on). Yet all optimists need not be naive, even if it were true that the majority were. Nor is it a foregone conclusion that radicals must be foolhardy, pacifists cowardly, atheists dangerous, Fundamentalists mindless, or conservatives obscurantist.

So when someone is accused of being a "cowardly pacifist," he can respond by distinguishing the complex question implied in the epithet:

"Yes, a pacifist I am; but I deny that I am cowardly."

Whenever we encounter derogatory adjectives modifying class terms, like those listed here, we should always be on the look out for question-begging epithets. They are one of the commonest features of political rhetoric.

Phrases like *cowardly pacifist* become circular whenever the suppressed assumption (that anyone who is a pacifist must be a coward) is left uncriticized. The element of question begging accordingly involves also something of the fallacy of poisoning the wells: there may be no evidence that is capable of falsifying the allegation implied in the epithet. Question-begging epithets are insidious precisely because they are so easily overlooked, unless we keep our eyes skinned for them. A short phrase, carelessly introduced, can thus undermine an otherwise sound argument.

There are also a large number of similar phrases that express qualities generally admired in our society. Using these terms, or their opposites, can color our arguments to the point at which those arguments become fallacious. We all want to be thought sincere, spontaneous, tolerant, authentic, and so on, and few of us really want to be thought of as impractical or aloof. Similarly writers and speakers regularly use certain words to embellish their points; for example, *evident* and *obvious*, *certain* and *precise*. Yet these terms are frequently misused. We are expected to acquiesce in the arguments concerned just because the assertor presents his views in this way. Yet what is asserted as "evident" or "obvious" is in fact often far from being so. (It pays to be on the lookout for such question-begging terms also; they are insidious precisely because they so easily pass unnoticed.)

Evading the issue

The fallacy of evading the issue occurs when a person attempts to sidestep a question directed to him rather than giving any real answer to it. Politicians often use this tactic in order to avoid divulging their true opinions about controversial bills. A Congressman may be asked, for example, how he intends to vote on an upcoming bill raising benefits for social-security recipients. He may reply by saying that he considers the elderly a very important segment of the community, that he has fought vigorously on their behalf in the past, and that he deplores the ill-treatment of the aged. However noble and highsounding these sentiments may

be—whether they are true or whether they are false—none of them in fact answers the question posed. If he deliberately confines his answer to general statements of this kind in order to conceal the fact that he intends to vote against increased old-age pensions, he is certainly evading the issue.

Of course, not all such evasions of the issue are necessarily fallacious. Questioners do not always have any right to the information they request. Students, for instance, do not generally have the right to ask their teachers what questions will appear in their examinations. The situation in this case is significantly different from that between a politician and his constituents, whom it is his function to represent in Congress. Here as elsewhere, therefore, whether this argumentative procedure is fallacious or no depends in part on *the situation in which it is employed*.

Appeals to authority

Authority, as we have seen, is one of the familiar and traditional topics around which sound arguments can be constructed. Such appeals to authority become fallacious at the point where authority is invoked as *the last word* on a given topic. The opinion of that authority is taken as closing off discussion of the matter in question. No further evidence is considered; the authority's opinion has settled the matter once and for all.

The classic case in which authority was supposedly invoked to counter other, more directly relevant evidence was that of the Aristotelian scientists who refused to look through Galileo's telescope. They refused in the conviction that Aristotle's opinion could not possibly be wrong, so that no observation could possibly—as Galileo alleged—run contrary to what Aristotle had taught. The argument ran roughly as follows,

- C: We can be certain that there are no "spots" on the sun without having to make observations of the sun with a telescope.
 G: As Aristotle assures us, the stuff of which the heavenly bodies are made is not subject to change.

This argument takes for granted the following warrant:

- W: Whatever Aristotle asserts about the nature of material things can be accepted as true without reservation and cannot be refuted by observation.

And the reliability of that warrant could be established only if we could produce, as backing, evidence that Aristotle's views on scientific matters were infallible.

In this example, the fallacy arises because the supposed grounds (i.e., Aristotle's views about the nature of matter) are simply *irrelevant* to the question at

issue (i.e., just what can, or cannot, be observed on the sun). The data used to support the initial claim are simply unrelated to the issue that has to be decided.

Some other fallacious appeals to authority are closer to our everyday experience. Consider the endorsements that film stars, athletes, and other celebrities make in advertisements of various products. Madison Avenue is well aware that fame, by itself, carries with it an aura of authority, and they use this mystique of the famous to sell us stockings or mufflers, whiskey or razor blades. Here again, the fallacy lies in the fact that the mere endorsement—which may not even represent the true personal opinion of the celebrity about the product in question—is just *irrelevant* to questions about the quality of the stockings, razor blades, and so on so endorsed.

Another fallacious variety of appeals to authority relies on taking the authority out of his field. Thus someone might attempt to argue in support of Zionism by pointing out that Albert Einstein was a Zionist. This argument rests on the implied warrant that Einstein's position on political matters can be taken seriously, just because he was an acknowledged expert on physics—a warrant that itself needs to be critically examined. It could well be asked whether an eminent scientist is any more of an authority on political matters than a baseball player is an authority on the merits of auto mufflers. (Our final answer may be "Yes, he is!"; but at any rate the question must be asked.)

This, of course, is not to suggest that *all* references to authority are irrelevant to the justification of claims and the resolution of debates. On the contrary, the increasing specialization of all our knowledge obliges lay people to seek the opinions of specialists having expert knowledge in particular fields for the information needed in the resolution of disputes. So the opinion of, say, Einstein on a question in physics might well be definitive. It is only when the authoritative character of his opinion is generalized in an unwarranted manner—when his expertness in physics is assumed to rub off onto all his opinions—that *fallacy* begins.

Similarly, appeals to authority become fallacious only when expert opinion is invoked in an argument precisely to stifle further inquiry rather than to illuminate the issue in question. Even in those cases where the appeal to authority may be in order, we should be prepared to justify our particular choice of experts. (Why choose Albert Einstein rather than Nils Bohr, say?) This will involve making explicit just who our chosen authority is and what his or her status actually is in the field concerned.

The argument against the person

The argument against the person is the fallacy of rejecting the claims a person advances simply on the basis of derogatory facts (real or alleged) about the person making the claim. Such a procedure takes for granted that the substance or content of a *claim* is essentially connected with the character or situation of the *claimant*. The most blatant forms of this fallacy reduce to nothing better than

name calling—and it is an unfortunate fact that we are all of us apt to take such tactics seriously when we are on the opposite side of an argument from the claimant in question.

Suppose, for instance, that the point at issue is the Carter administration's advocacy of human rights in the Soviet Union. Some people will challenge this policy on the grounds that its advocates within the administration are either stupid or hypocritical. Yet even if that were clearly the case, would that really discredit the policy itself? Evidently, arguing against the person in this kind of way can serve as a powerful method of distracting attention from—and so evading—a thorny issue.

There are, however, more subtle variations on the same theme. Another way of arguing against the person rather than against his or her claim, for instance, is sometimes referred to as attributing "guilt by association." Here we try to refute a claim by associating the claimant with a discredited *group* of persons; if the claimant is a Red, say, then he or she cannot be trusted to tell the truth. Smith's claim that unemployment is a graver problem than inflation, for example, may be countered on the grounds that Smith is a Communist. The presumed warrant is that the opinions of Communists on such matters are always biased. Furthermore it is presumed that this generalization is *obviously* true. This is where the difficulty begins. Just because someone is a Communist—or, for that matter, a Jew or an ex-convict or a redneck, an intellectual or a liberal or a woman—does not *by itself* imply that what the person says about any issue is false, unjustified, or gravely biased. Even the most misguided of people occasionally put forward true claims—if only by accident!

A third type of argument against the person assumes that all members of any group are interchangeable, so that there will be no significant differences between individuals within the group. Further, it is assumed that by the very nature of the group, anyone who belongs to it simply cannot—with all the goodwill in the world—treat the given question objectively.

Thus it may be argued that a certain historian's interpretation of Luther is incorrect merely by virtue of the fact that the historian happens to be a Roman Catholic. This argument assumes that Roman Catholics are incapable of viewing the Protestant Reformation (more specifically, Luther) without bias. The person whose views are being argued against is said to "have a blind spot": something about his social or economic, ethnic or religious background disqualifies him from seeing the given subject objectively.

This may as a matter of fact sometimes be the case. But we should know from the fallacy of hasty generalization that it does not *have* to be so. It is an open question whether any individual will or will not be able to view any subject disinterestedly. So until they are supported by relevant evidence about the individual concerned, charges of bias such as these amount to no more than accusations of guilt by association.

The argument from ignorance

The argument from ignorance is a fallacy that we are apt to commit when we erroneously reason from opposites—or to be more precise, when we erroneously argue that a claim is justified simply because it opposite cannot be proved.

The classic illustration of such an appeal to ignorance is that of an atheist who claims that God does not exist simply on the grounds that no one has ever proved beyond doubt that He does exist. Granted, the fact that no one has ever proved the existence of God beyond doubt may well seem to lessen the probability that there is a God. But that is not a sufficient basis for asserting that the issue is resolved against God's existence, once and for all. To put it simply, on the basis only of what has *not* been proved about something, we cannot certainly infer *anything at all*.

A similar appeal to ignorance underlies many people's credulity toward astrology:

C: The stars seem to hold the key to our destiny.

G: No one has ever demonstrated conclusively that the stars do *not* hold the key to our destiny.

W: When a hypothesis has not been conclusively disproved, that lack of proof by itself can be taken as *evidence for* the hypothesis.

To provide backing for such a warrant, we should have to argue that *lack of proof* is itself a kind of evidence, and this would trivialize the concept of *evidence* beyond recognition. If that were true, we would no longer need to establish any substantive connections between grounds and claims—which is still the primary question at issue in any area of rational thought and investigation.

(Notice that this assertion is *not* in contradiction with what we said in an earlier chapter about standing presumptions, for example, the presumption of innocence in a criminal trial under Anglo-American jurisprudence. There the standing presumption is justified by specific *functional* considerations. It is not just a general license to think as we please in the absence of *contrary* evidence.)

The appeal to the people

The appeal to the people refers to fallacious attempts to justify a claim on the basis of its supposed popularity. The fact that many members of a given group hold some belief is offered as evidence that this belief is true. Class or national, religious or professional identity is substituted for the evidence that would be genuinely relevant to the truth of the claim.

Such fallacies are committed by political propagandists, for example, when they endeavor to win support for a policy of heavy taxation by reminding us that

real Americans have always possessed enough pioneer spirit to withstand belt tightening. (Think of the sacrifices that the heroes of the Revolution made in order to free the country from British tyranny, and so on.) Hitler's propaganda machine continually made use of such arguments, disarming opposition by calling on "true Germans" to fall in line behind his efforts to redeem the fatherland from its disgrace at the ignoble hands of international Jewry, and so on.

Advertisers use a similar tactic when they appeal to consumers to buy products by associating them with an image of "the ideal American." Television commercials for breakfast cereals present a blissful family scene; the implication is that your family will become like this one—happy, bright, respected, admired—when you switch to their brand of cereal. Others play on our conformity or on our snobishness instead of giving us real information about the quality of the product. The implied warrant encourages us to trust the product (or belief) in question, not on account of any demonstrated merits but simply because other people supposedly do so.

The appeal to compassion

The appeal to compassion is the traditional name for a fallacious "sob story." Sob stories are not necessarily fallacious. They become so only when they are used to obscure an issue.

The appeal to compassion is an argument that plays upon our feeling of human sympathy in situations where we are required to make rational decisions. Defense lawyers in criminal cases will often resort to this tactic, if not to convince the jury that their clients are innocent, at least to lessen their sentences. Thus, in defending a young car thief, a lawyer may underline the facts that his client came from a home where he was insecure and continually lonely; that his parents abused him, and he ran away from home to avoid this; that he fell prey to the influence of hardened criminals, who were the first persons to treat him with any appearance of kindness—and ask the court to take all these facts into consideration before pronouncing too heavy a sentence.

This argument can be schematized as follows:

- C: This young man should not be sentenced according to the full severity of the law.
- G: He has had a miserable childhood.

Implicit in this argument is a warrant:

- W: When we are deeply moved by the early sufferings of a young car thief, we should let those emotions be our guide in determining the appropriate punishment.

Formulated as a general rule, this warrant appears somewhat ludicrous. Certainly it would be hard to provide adequate backing for such a warrant having anything to do with the facts of the case, that is, how many cars were stolen, under what circumstances, and so on.

Can any sensible person ever fall for such tactics? According to some reports, just such considerations led President Ford to issue his controversial pardon of Richard Nixon. As the story goes, Ford was told that Nixon was in such bad physical and psychological shape that he might commit suicide within months of resigning the presidency. Yet did these considerations have anything whatsoever to do with Nixon's guilt or innocence in the Watergate affair or the subsequent cover-up? Or would it be correct to conclude that in pardoning his predecessor, President Ford was distracted by the appeal to compassion from paying attention to the questions really at issue?

The appeal to force

Traditionally appeals to force are included among the fallacies of unwarranted assumption. Strictly speaking, however, such an argument is hardly a *fallacy* at all. It leads to compliance rather than conviction in a hearer, and the speaker who resorts to such arguments is scarcely self-deceived.

Appeals to force are simply *threats*, which imply that the individual will be harmed in some way unless he does or says (or refrains from saying or doing) whatever the assertor requires by way of agreeing with his claim. The principle—or warrant—by which such an argument is enforced is the notion that “might makes right,” that is, that those who have strength cannot only make and enforce claims but also justify them.

The threats need not, of course, be physical; they can be moral or psychological. The preacher who promises us damnation if we do not stop sinning *threatens* us as surely as the criminal who promises us that our family will be injured if we testify about his misdeeds in a court of law. There is no doubt that such “arguments” are persuasive, but they only persuade us to act or speak in the required way *against our wills and personal convictions*. We do not come away from such threats convinced that just because we comply with these demands, they are *justified*. We come away intimidated rather than deceived.

At the same time, there are certain perfectly sound “arguments of expediency” that people use when they resort to threats. Consider the argument in Figure 11–8. The implied warrant is shown in Figure 11–9. For this warrant, there is all too much *backing* available in the form of knowledge about the sufferings of those who are old and sick, poor and dependent on charity.

As every scriptwriter knows, those who threaten force often in fact produce mock warrants sounding just like the one in Figure 11–10 as added “persuasion” to enforce their threats. But in this case, a new kind of circularity is introduced into the argument, for the only *backing* available in the case of an appeal to force

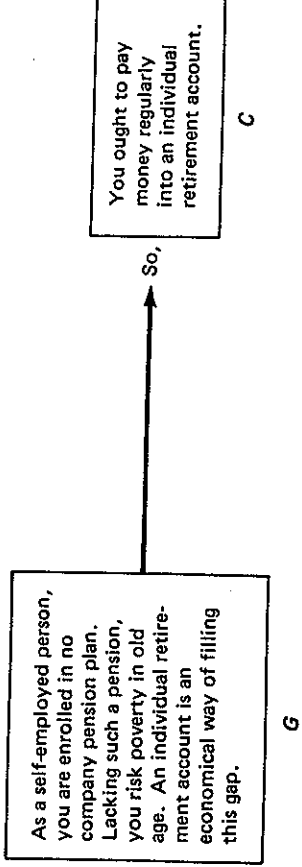


FIGURE 11-8

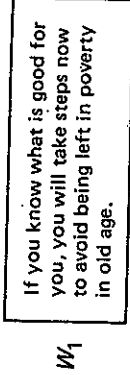


FIGURE 11-9

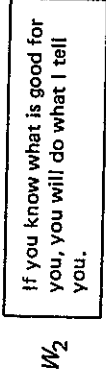


FIGURE 11-10

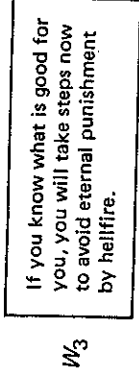


FIGURE 11-11

is the very threat that we started from. All that is produced as “justifying” you in accepting the assertor’s original claim is a second-order threat, namely, that if you do not agree, the original threat will be carried out.

In this respect, no doubt, a hellfire sermon differs from a straightforward criminal assault; where both preacher and congregation are convinced believers in hell and damnation, the prospect of eternal punishment after death can provide as powerful a “reason” for virtue in this life as the prospect of poverty in old age can provide for regular saving during your working years. The question that remains in this case has to do with the solidity of the *backing* for the associated “warrant” (see Figure 11-11).

FALLACIES OF AMBIGUITY

We all know how the lively discussion of a controversial topic can reach an impasse, merely because some crucial term is being used in different senses by the

opposing parties in the discussion. These stalemates may result from intentional or arbitrary efforts to the other side to confuse us. But they may very well arise unintentionally, through sheer misunderstanding or cross-purposes. As such, they are often reinforced by one prominent feature of language, namely, *ambiguity*.

Ambiguity should not be confused with vagueness. Ambiguity operates in situations where it is not clear which of two perfectly legitimate and definite meanings of a term or statement the speaker intends. Vagueness, on the other hand, operates in situations where the expressions involved are imprecise or indefinite. The question "Is there a pitcher in the next room?" is *ambiguous*, because the pitcher in question could be a household vessel or a baseball player. The statement "I will visit you sometime next week" is *vague*, because it fails to tell us on which precise day the visit will take place.

Ambiguities are such a rich source of fallacious arguments that Aristotle actually devoted one of the two major parts of his treatise on fallacies to those that were rooted in ambiguous language. We must now pay attention to these fallacies of ambiguity ourselves.

A cursory glance at the dictionary shows us how many words in common use have more than one meaning. The word *pen*, for instance, may refer to an instrument for writing, to an enclosure for animals, or to a prison. The word *pen* is not, of course, the sort of word that presents serious problems; it is normally clear from the context of any discussion which sense of the word is intended. (It all depends on whether the subject under discussion is writing, animal husbandry, or jails.) But if the discussion turns instead to, say, the role of "private interests" in politics, matters may not be so clear-cut. In this context, the term *interest* may refer to those things that a given group or individual *desires* or alternatively to their *needs*—which may not be the same as their desires or wants. Thus a political argument about "interests" that fails to distinguish between desires and needs at the outset can easily end in chaotic misunderstanding or unproductive digressions.

It is not just individual words but also statements and questions that can be ambiguous and so lead to confusion. One newspaper reporter was supposedly asked to do a feature on Cary Grant for the Sunday supplement. Rereading his draft article, the reporter discovered that he had not included Cary Grant's age. Anxious about his deadline, he hurriedly wired Grant's agent:

"How old Cary Grant?"

The agent responded with a telegram that read:

"Old Cary Grant fine. How you?"

More seriously, it can be important to recognize and be on our guard against the most bothersome types of ambiguity that commonly occur in writing and speech. So in what follows, we shall glance at some of the pitfalls that await us if we disregard the subtleties and ambiguities of language.

Equivocation

The fallacy of equivocation occurs when a word or phrase is used inconsistently—that is, in more than one sense within a single argument—with the result that its various senses are confused. Under this general blanket heading are included five more specific kinds of fallacies of ambiguity. They are traditionally referred to as amphiboly, accent, composition, division, and figure of speech.

One historical example of the fallacy of equivocation occurs in an argument by which Lorenzo Valla, an Italian Renaissance humanist, attempted to justify free love. His argument was based on the dual meanings of the Latin word *vir*, which means both “man” and “husband.” Exploiting the fact that this single word has both these meanings, he claimed that *Every man is a husband* and concluded that marriage is therefore a superfluous institution. His argument was, however, fallacious on grounds of inconsistency: although *vir* can legitimately mean either “man” or “husband” according to context, it cannot consistently mean both in a single passage. You cannot switch from one sense to another in midstream, as it were; that would be no better than perpetrating a pun on the two senses of the word *pitcher*:

“This team needs a new pitcher. So go and get one from off the shelf in the kitchen!”

We can also commit fallacies of equivocation through failing to note the peculiarities of relative terms like *big* and *small*. Thus you cannot support the claim (C), “This is a small animal,” by producing as grounds (G) the statement, “This is a small hippopotamus.” Such terms refer to different specific qualities when used to modify different nouns. In a slightly more subtle case, just because a man is of ordinary and common appearance, you cannot conclude that he is a man of ordinary and common talent. This would be to equivocate upon the phrase “ordinary and common,” which means quite different things when it refers to a person’s abilities and when it refers, say, to his mode of dress.

Nor does the fact that Don Carlo Gesualdo wrote great madrigals imply that he was a great man. There are quite different criteria for judging someone to be a “great man” than there are for judging him to be a “great musician.” For all his musical talent, Gesualdo was apparently responsible for the deaths of his wife and daughter, and he may actually have killed them in cold blood himself. So theories of aesthetics that make the quality of a work of art depend on the character of the artist lay themselves open, among other things, to the fallacy of equivocation.

Amphiboly

One special kind of ambiguity gives rise to the fallacy of amphiboly. This occurs as a result of faulty grammar: omission of a comma or other punctuation, careless positioning of qualifying phrases or words, and the like. Instruction manuals, advertisements, and public notices often contain amphibolies.

The *New Yorker* magazine often prints humorous examples of such ambiguities to fill the space at the bottom of columns. The following announcement is one of these:

Astronomy Club—meets Thursday after school with Mr. Nocella broken in two parts.

Presumably the club was to be broken into two parts, but the grammatical structure of the sentence left it unclear whether it was not Mr. Nocella who would suffer that fate.

On occasion, such ambiguities may be more than a joke. Consider the dilemma facing a lawyer, on discovering the following bequest in a will:

“I hereby leave \$5,000 to my friends John Smith and William Jones.”

Supposing that the estate amounts to more than \$10,000, the lawyer must decide whether the deceased intended to leave a separate \$5,000 to each of the two friends or whether the lump sum of \$5,000 was to be divided between them.

Another example of amphiboly may occur in mathematical arguments. Sometimes a problem is inadequately formulated, owing to some syntactical ambiguity. Thus the equation:

$$X = 2 \times 3 + 9$$

is ambiguous as it stands, for lack of parentheses. The calculation may yield “ $X = 15$ ” or “ $X = 24$,” depending upon where we insert our parentheses, that is, on our syntax. For if we write:

$$X = (2 \times 3) + 9, \text{ then } X = 15;$$

Or, alternatively, if we write:

$$X = 2 \times (3 + 9), \text{ then } X = 24.$$

From this kind of example, we can see how much difference grammatical slips can make to the soundness of an argument. So although amphiboly is neither the most insidious nor the most frequently encountered kind of fallacy, practice in identifying grammatical ambiguities can help us to pay greater attention to the clarity of our own presentations. Once identified, such fallacies are easily enough eliminated through rewriting.

Accent

The fallacy of accent occurs as a result of misplaced emphasis. As a normal feature of everyday language, emphasis is not in general fallacious or distorting. Once again, it leads us into fallacy only in certain circumstances, when misplaced emphasis leads our understanding of an argument astray.

In spoken arguments, accent can lead to fallacy when our gestures or inflections serve to distort the meaning of what we are saying. Consider the statement:

“He should not have treated his wife that way in public.”

Depending on whether we emphasize “he,” “his wife,” “that way,” or “in public,” we suggest slightly different meanings. So the written transcript of a public speech or of verbal evidence in court can be very misleading. From different accentuations, differences of meaning arise, and from these differences of meaning comes the possibility of ambiguity.

There are basically two ways in which emphasis may give rise to fallacy in written arguments. These are

1. Taking something out of context.
2. Using italics, boldface, or other techniques to lend a false significance to a statement that is literally true, or vice versa.

When we quote statements from others, for instance, there are all sorts of subtle ways in which the meaning can be altered; for example, by leaving out punctuation or italics or putting them in the wrong place, or alternatively, by omitting parts of the quotations, which can alter the whole sense of the quoted material.

Just as individual words are just about meaningless outside the contexts of the sentences in which they appear, individual sentences can be interpreted with any exactitude only in the larger contexts in which they figure. It may be of crucial importance to know, for example, whether a particular argument was intended for presentation to a group of labor union members or to college students or to a scientific congress. Without this information, we cannot hope to assess it properly, that is, as its author intended it to be taken. Similarly it is crucial to know whether the author of a passage was being ironical, expository, or analytical and whether his aims were literary, scientific, or moral. Without this information, we shall again be unable to assess the claims he makes.

Consider, for instance, the publisher who issued and titled two books called *A World Without Jews* by Karl Marx and *German Existentialism* by Martin Heidegger. The first of these books contained a number of extremely ironical essays, which Marx actually did write. The latter book consists of some public speeches by Heidegger, as well as a collection of newspaper clippings that associate Heidegger with the Nazi movement. No doubt, Marx's attitude to Jews and Heidegger

degger's relationship to the Nazis are both problematic, but publishing their arguments under titles that they did not choose has the effect of wrenching them completely out of context and invites a fallacious interpretation from the reader.

Hardly any book is more misquoted than the Bible. We can "prove" just about anything we please from the Bible's passages, which—taken overliterally—seem to state whatever it is we wish to establish. In this way, the most outrageous points can be given a scriptural basis. For example; in order to demonstrate that God does not exist, we need merely turn to Psalm 13. There we find the assertion, "There is no God." Unfortunately the context in which the assertion appears is once again important: the whole sentence reads, "The fool has said in his heart: 'There is no God.'"

A second type of fallacy of accent may be found in many advertisements and newspaper headlines. An ad for a supermarket chain in the food section of the newspaper reads:

FREE CHINA WITH EVERY PURCHASE*

This looks like a good deal until we discover the small print to which the asterisk refers. There the eye-catching phrase in bold print is severely qualified: it turns out that we can obtain one free saucer if we purchase \$25.00 worth of food and that only one such bonus will be allowed per family. The rest of the set is then obtainable through the supermarket at \$4.95 per item, plus tax.

Many tabloid magazines and newspapers exploit the same type of fallacy. They promise something salacious on the cover but disappoint the prurient reader's curiosity once he buys the periodical and looks inside. For example; the cover may carry a picture of Jacqueline Kennedy Onassis, together with the words, "JACKIE'S TRUE LOVE REVEALED." Once we have paid and looked inside, a glance informs us that her "true love" is—her children. Another favorite is the "CANCER CURE" headline, covering a story about the remote possibility of finding a cure for *some* types of cancer *within our lifetimes*.

When such tactics are used in good faith and are not intended to deceive us, they are of course fairly easy to correct. When we reread a draft presentation from a reader's standpoint, we can often recognize for ourselves the necessity of scaling down the boldface, or making up a more modest headline, or adding missing italics, or whatever.

Composition and division

Two other related fallacies of ambiguity are the fallacies of composition and division. These are two sides of the same coin. Composition occurs when we assert about an entire group something that is true of all its parts. Division occurs when we assert about all the parts of a thing something that is true of the whole.

If we were to argue that because the constituent cells of the human body are

microscopic, the entire body too must be microscopic, that would be to commit the fallacy of composition. Conversely, if we were to argue that because the entire human body can be seen with the naked eye, all the constituent cells that make up the human body must also be visible to the naked eye, that would be to commit the fallacy of division.

Those two arguments are no doubt transparently fallacious, and it is unlikely that anybody would be taken in by them. But consider the following example:

C: Sodium chloride must be poisonous.

G: Its two constituents, sodium and chlorine, are both of them deadly poisons.

This argument relies upon the warrant:

W: What is true of the constituents of a chemical compound is true of the compound.

Plausible though it may seem, a cursory glance at the facts about chemical compounds and their constituents shows that such a warrant is without foundation. (In fact, sodium chloride is simply the chemical name for common salt.) This argument illustrates the fallacy of composition. Conversely, of course, claiming that sodium and chlorine must both be edible on the ground that sodium chloride is edible would commit the fallacy of division.

It is not hard to confuse the fallacies of composition and division (which are fallacies of ambiguity) with the parallel pair, hasty generalization and accident (which are fallacies of unwarranted assumption). A little attention to the subject over which confusion arises in each case can resolve this difficulty. In composition and division, we are discussing things or groups of things (the relationship between a whole and its parts or between a set and its members), whereas hasty generalization and accident are mistaken ways of reasoning about general rules or warrants and about qualifications and exceptions to such general rules or warrants. The fallacy of hasty generalization occurs when we try to justify a rule on the basis of too few instances: "One swallow does not make a summer." The fallacy of accident occurs when we fail to recognize that rules are liable to exceptions: "Circumstances alter cases." Both kinds of fallacies involve mistaking what is *usually or often true* for what *must always be true*.

The fallacies of composition and division involve no such mistakes. As our last example indicates, the grounds of a fallacious argument may be simply true: the two elementary components of sodium chloride are both of them highly poisonous. We go wrong if we fail to note that when they combine, a real change of chemical properties takes place. So in fallacies of division, we move from *true grounds* to a *false claim*.

Figure of speech

The fallacy of figure of speech results from taking grammatical or morphological similarities between words as indicative of similarities in meaning. The classic illustration of this fallacy occurs in John Stuart Mill's essay on "Utilitarianism." Mill was discussing what is "desirable": just as *visible* means that an object *can be* seen, and *audible* means that an object *can be* heard, so too (Mill argued) *desirable* means that an object *can be* desired. Actually the latter word normally means that the object in question *ought to be* desired, but Mill chases to play on its surface similarity with *visible* and *audible*.

To give a more practical illustration of this kind of fallacy; consider the structure of the English word *inflammable*. It is natural enough to mistake the prefix *in* as indicating negation. Just as *ineligible* means "not eligible," *inedible* means "not edible," and *incontestable* means "not contestable," so *inflammable* looks as though it means "not flammable." (In French, this is correct: the word *inflammable* in French means the same as *noninflammable* in English. Unfortunately languages are not always consistent on such points.) There are in fact two prefixes in English spelled *in*: one of these is negative, but the second signifies "thoroughly." (The latter form is recognizable in words like *invaluable*, where the prefix serves to *intensify* the meaning of the adjective.) So the English word *inflammable* in fact means "*Highly* flammable."

Another variation on the fallacy of figure of speech occurs if we assume that every noun *stands for* a thing or object. Nouns can represent aggregates (e.g. *army* or *output*) or relationships (e.g., *marriage* and *equality*) and do not refer only to the traditional triad: persons, places, and things. Nouns can also be used metaphorically or to represent abstractions, so we may speak of "the ship of state" or discuss the nature of "legitimate authority." However, we cannot conclude that all these subjects of discourse are the same kinds of things just because they are denoted by the same sorts of words.

A humorous illustration is Gilbert Ryle's imaginary visitor to Oxford University, who visits all the colleges that make up Oxford and asks at the end, "But where is the university?" Other more serious examples involve what is called *reification*; for instance, the prolonged controversy in the history of physics over the concept *force*. For a long time, it remained unclear just what sort of "thing" a *force* was, and scientists were at serious cross-purpose because they could not agree on what they should be "looking for" as the *thing* to which the word *force* referred.

Avoiding fallacies of ambiguity

The problem of avoiding ambiguities in argumentation is not one that can be dealt with by any mechanical procedure. Rather, it demands, above all, that we make ourselves aware of the complexities of language. The person with the greatest facility for detecting fallacious ambiguities will, most likely, also be the one

who is most attuned to the nuances of words and their usage. This attuning comes largely from the familiarity with the manifold means of deploying language that is developed through a careful study of languages and literature.

In conclusion, we should once again underline one central point. There is nothing inherently fallacious about ambiguity as such. Not all ambiguities give rise to fallacies. Indeed ambiguity plays some important roles in literature and in life in general. Much that is beautiful, humorous, and even wise can best be expressed in usage that takes advantage of it—think of the poet's use of metaphor, the dramatist's use of innocent puns, or the scientist's use of analogy. Rather than eliminating ambiguity entirely, and so impoverishing language, we need to develop our sensitivity to the ambiguities in language, and so train ourselves to avoid the pitfalls to which ambiguity can lead if its presence in argument goes unrecognized.

Exercises for Chapter 11, "Fallacies"

- I. Some of the following contain fallacies. Discuss the reasoning in each argument and identify the fallacy where one is present.
 1. Republicans are traditionally the defenders of the interests of big business, so it makes little sense for a working man to vote for a Republican candidate.
 2. The Equal Rights Amendment was endorsed by Senator Proxmire, Senator Kennedy, and former Representative Abzug. It is clearly worthy of universal support on these grounds.
 3. All of the great discoveries of mankind were made during the occurrence of sunspots. Our mental powers wax and wane during their eleven-year cycle. The great discoveries of Einstein and Newton were made at the time of the greatest sunspot activity.
 4. SMITH: Look, there is Professor Green. Say, Professor Green, I'd like to ask you a question. What do you say to the many cynics who put down your best-selling book?
PROFESSOR: As Oscar Wilde so wisely remarked, a cynic is someone "who knows the price of everything, and the value of nothing."
SMITH: Wow! Heavy.
 5. Adolf Hitler recognized the political advantages of a disarmed citizenry. He went around the country proclaiming that the gun had become the criminal's stock in trade and warned of the growing danger from subversives who were stockpiling arms. He claimed in order to restore law and order and make the country safe from subversives it would be necessary to confiscate privately owned firearms. We all know that Hitler had some opposition to this idea but when the program was completed and all the guns were confiscated the opposition seemed just to fade away.

Argument against gun control in the "Letters to the Editor"
column of the Philadelphia *Bulletin*